



Force Health Protection and Readiness Questions for the Defense Health Board Relating to Burn Pit Smoke Exposure and Health Risks

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Outline

- OSD/Force Health Protection & Readiness Requests to the Defense Health Board
- Background/Timeline: Assessments on Burn Pit Smoke and Associated Health Risks
- Findings of the May 25, 2010 AFHSC Report “Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites”
 - Specific Questions to the Board (2)
- Draft USCENTCOM Air Surveillance Sampling Plan
 - Specific Questions to the Board (6)



Questions to the Board

- DoD/Health Affairs, Force Health Protection and Readiness is requesting DHB review of the
 - (1) May 25, 2010, Armed Forces Health Surveillance Report "Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites"
 - (2) Draft Air Surveillance Sampling plan for up to three locations in the US Central Command area of responsibility



Timeline of Assessments on Burn Pit Smoke and Associated Health Risks

Comprehensive analysis of ambient air containing burn pit smoke began in 2005

- 2005-2006: Routine air sampling at Joint Base Balad (JBB), then the largest burn pit in theater
- 2006: JBB Environmental Health Site Assessment
 - Identified the burn pit as requiring further study
- 2007 (Jan-Apr): 163 air samples collected at JBB for accomplishment of a Screening Health Risk Assessment (HRA)
- 2007 (Oct-Nov): 107 air samples collected at JBB after two 64 ton incinerators installed
- 2008 (May): 3rd 64 ton incinerator installed at JBB
- 2008 (May): JBB Burn Pit Screening HRA completed (using the 163 air samples collected in early 2007)
 - Cancer risks in EPA acceptable range; hazard quotient <1
 - 2008 (Feb) FHP&R submitted to DHB for review



Timeline of Assessments on Burn Pit Smoke and Associated Health Risks (Cont)

- **2008 (June):** DHB review comments received – many recommendations, but concluded: “... given the available data the screening risk assessment provides an accurate determination of airborne exposure levels for service members deployed to Balad Air Base. Based on the information provided, no dioxin-associated significant short or long-term health risks or cancer risks are anticipated among personnel deployed to Balad, Iraq.”
- **2009 (May-June):** 3 incinerators operating at JBB; 270 air samples collected (report pending)
- **2009 (Aug):** Addendum (2) to the JBB Screening HRA completed
 - Cancer risks in EPA acceptable range
 - Hazard Quotient: > 1 due to presence of respiratory irritants such as acrolein; compatible with indication of elevations in acute health effects at JBB
- **2009 (Aug):** GAO begins Congressional investigation into burn pits and smoke exposures
- **2009-2010:** Numerous media reports and congressional concerns regarding allegations (400-500 personnel) of long-term health effects among veterans



Timeline of Assessments on Burn Pit Smoke and Associated Health Risks (Cont)

- 2009-2010 (Cont):
 - Some service members diagnosed by Military providers with respiratory conditions due to “inhalational causes in theater”
 - 2009 (April): OSD(HA)/FHP&R acknowledges medical plausibility of long-term health effects in some individuals – likely due to elevated exposures, combined exposure (i.e., tobacco smoke, high particulate matter exposures or other pollutants), or due to increased susceptibilities (preexisting health conditions, or genetics)
- 2009 (Sept-Oct): 4th incinerator installed at JBB; burn pit permanently closes
- 2009 (Oct): Based on continuing concerns, Acting DASD (FHP&R) tasked AFHSC to perform epidemiological assessment of the risks associated with exposure to burn pit smoke
- 2009 (Dec): Preliminary AFHSC Report submitted to FHP&R



Timeline of Assessments on Burn Pit Smoke and Associated Health Risks (Cont)

- **2010 (Feb):** The IOM begins 18-month study on burn pit smoke exposures, commissioned by the VA
- **2010 (Mar-May):** 330 air samples collected at JBB; no open burning occurring (report pending)
- **2010 (May) :** Final AFHSC Burn Pit Epidemiologic Report submitted to FHP&R
- **2010 (June):** AFHSC Report sent to the DHB for peer review
- **2010 (June):** GAO Preliminary findings on Burn Pit Smoke Exposures Briefed (epi methodology/approach only)
- **2010 (Nov projected):** Completed DHB peer-review expected on AFHSC Report
- **2011 (2nd-4th quarters projected):** Implementation of USCENTCOM Air Surveillance Plan



The Draft USCENTCOM Air Surveillance Plan

- Tailorable site-specific plan, involving a phased approach, close to completion; still acquiring specific site details
 - Three locations to be selected by US Forces-Afghanistan; first site is in western Afghanistan
- Phase 1: to conduct ambient monitoring at additional burn pit locations in theater
 - Would include continuous and 24-hour composite ambient air samples targeting all known major emissions sources including burn pit smoke: PM, dioxins, furans, VOCs, hexachlorobenzene, acid gases, PAHs



The Draft USCENTCOM Air Surveillance Plan

- Phase 2: If ambient samples suggest the possibility of an increased health risk, indoor air samples to be taken in living/work areas to further refine individual risk
 - Could include some limited personal monitoring
 - Particulate matter, inorganic combustion gases, aldehydes



AFHSC Report "Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites" Preliminary Findings

- For nearly all health outcomes measured, the incidence for those health outcomes studied among personnel assigned to locations with documented burn pits and who had returned from deployment, was either lower than, or about the same as, those who had never deployed.
- Similar findings occurred in comparisons between those who had deployed near a burn pit and those who had deployed outside the area of a burn pit, with one exception:
 - A small, but measurable increase in the rate of signs, symptoms and ill-defined conditions was noted for personnel deployed to a site (Arifjan, Kuwait) without a burn pit; AOR: 1.07 (1.03-1.12)



AFHSC Report "Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites" (Cont)

- For health outcomes measured in theater, Air Force members at Joint Base Balad had a higher proportion of respiratory encounters, although Army members at the same location and Service members at the other burn pit sites studied did not.
- Burn pit exposures at various times before and during pregnancy, and for differing durations, were not associated with an increase in birth defects or preterm birth in infants of active-duty military personnel.
 - An increased risk of birth defects was seen, however, among infants of male Service members who were deployed to a burn pit region more than 280 days prior to their infant's date of conception. AOR: 1.31 (1.04-1.64)



AFHSC Report "Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites" (Cont)

- Among deployers, self-reported, newly diagnosed lupus and rheumatoid arthritis were not significantly associated with 3-and 5-mile proximity to a burn pit or cumulative days exposed compared with those not within proximity of the 3 burn pits identified in this study.
 - However, a statistically significant elevated risk of newly reported lupus was seen for those deployed within proximity of the documented burn pit at JBB, possibly warranting further investigation By site analysis: AOR 3.52 (1.59-7.79)



Request to DHB Pertaining to the AFHSC Epidemiologic Report on Burn Pit Smoke Exposure

- Request the DHB review the AFHSC “Epidemiological Studies of Health Outcomes Among Troops Deployed to Burn Pit Sites” Report
- Questions:
 - Based on the data available for the conduct of the individual epidemiologic studies, were the methods used, the analyses conducted, and interpretation of the results appropriate?
 - Are there additional studies or modifications to the completed studies that the Board recommends to further determine whether there may be long-term health effects associated with the inhalation/exposure of/to burn pit smoke?



Request to DHB Pertaining to the USCENTCOM Air Surveillance Plan

- Request the DHB review the air surveillance plan to support the collection of additional air samples at up to three additional burn pit locations.
 - Data will be used to conduct site-specific health risk assessments on deployed populations assigned to locations with burn pits



Request to DHB Pertaining to the USCENTCOM Air Surveillance Plan (Cont)

- Questions: Is the air surveillance plan, including its phased approach, suited to identify the health risks at other burn pit locations and also to further refine individual health risks when indicated?
 - Is there value in conducting this additional ambient air monitoring? (Phase 1)
 - Is there value in conducting indoor air and/or personal monitoring in conjunction with ambient monitoring? (Phase 2)
 - Are the proposed analytes appropriate and reasonable?
 - Is a combination of continuous and time-integrated monitoring appropriate?
 - Will this approach and the resulting data set provide a useful foundation for efforts to characterize health risks?
 - How can the data best be used to support long-term health risk assessment?



Thank You

Questions?

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